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| 10/028,647 | 12/19/2001 | Michele Goodwin | 47613/SAH/X2 | 2661 |
| 35114 7590 01/18/2007 ALCATEL INTERNETWORKING, INC. ALCATEL-INTELLECTUAL PROPERTY DEPARTMENT 3400 W. PLANO PARKWAY, MS LEGL2 PLANO, TX 75075 | | | EXAMINER CHEA, PHILIP J | |
| | | | ART UNIT 2153 | PAPER NUMBER |

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
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Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/028,647

Applicant(s)

GOODWIN, MICHELE

Examiner

Philip J. Chea

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 September 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

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DETAILED ACTION

This Office Action is in response to a Request for Continued Examination filed September 21, 2006. Claims 1-19 are currently pending. Any rejection not set forth below has been overcome by the current Amendment.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1,2,4,6-14, rejected under 35 U.S.C. 103(a) as being unpatentable over Stone (US 6,041,057), and further in view of Gleeson et al. (US 5,959,989), herein referred to as Gleeson.

As per claim 1, Stone discloses a communication network, as claimed, comprising:

at least two switches, each switch being capable of maintaining a database of VLAN membership (see column 5, lines 49-62, where membership database is considered topology database), with said first switch utilizing a first source learning function to maintain the database of VLAN membership, and said second switch using a second source learning function to maintain the database of VLAN membership, wherein said first source learning function is independent to said second source learning function (see column 9, lines 15-41, since each switch maintains their own VLAN membership and topology, it is implied if not inherent, that two different switches have done their source learning independently), and further wherein each of the said first source learning function and said second source learning function including auto-discovery capability (see column 2, lines 15-18, where self-configuring is considered a source learning auto-discovery);

a backbone network interconnecting the switches (see Fig. 1); and

at least one network node coupled to at least one of the switches (see column 6, lines 12-19, where network node is considered an end user),

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wherein the VLAN membership database in said at least two switches are synchronized with one another via a VLAN advertisement protocol (see column 5, lines 26-36, where synchronization is considered advertising topology).

Although the system disclosed by Stone shows substantial features of the claimed invention (discussed above), it fails to disclose that a user can disable the at least two switches from synchronizing with each other using VAP and still maintain auto-discovery capability of at least one of said first source learning function and said second source learning function.

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Stone, as evidenced by Gleeson.

In an analogous art, Gleeson discloses a system containing a VLAN for efficiently distributing multicast messages to subscribing entities of a network (see Abstract). Further showing that using the VLAN Trunk Protocol, advertisements can be sent to switches to re-configure the network such as changing the parameters of an existing VLAN (see column 8, lines 30-47, where intermediate devices are considered switches) by configuring individual ports to receive or ignore messages (see column 11, lines 7-19 and 44-60 and column 12, lines 45-65). Therefore disabling any synchronizing messages between switches if all ports are to ignore incoming messages from another switch.

Given the teaching of Gleeson, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Stone by employing VLAN Trunk Protocol to configure the parameters of an existing VLAN, such as disclosed by Gleeson, in order to create an efficient way of advertising messages.

In considering maintaining auto-discovery capability of at least one of said first source learning function and said second source learning function, a person of ordinary skill in the art would recognize that the system of Stone maintains an auto-discovery capability even when a switch is disabled. Stone shows that a switch initiates a hello request message whenever the switch learns of a neighboring switch in order to keep current topology information. Given the teaching of Stone, it is clear that a switch still maintains auto-discovery capability because once synchronizing messages are enabled (i.e. from a switch restarting) the most current VLAN membership will be available from neighboring switches.

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As per claim 2, Stone in view of Gleeson further disclose that the VLANs and VLAN membership are dynamically provisioned across the backbone network (see Stone column 5, lines 49-62, where dynamically provisioned is implied by the switch being able to learn about the topology).

As per claim 4, Stone in view of Gleeson further disclose that when at least one network node is moved from a first switch to a second switch, the second switch is capable of advertising the move (see Stone column 7, lines 7-30).

As per claim 6, Stone in view of Gleeson further disclose that a protocol between said at least two switches has topology discovery capability (see Stone column 5, lines 26-36).

As per claim 7, Stone in view of Gleeson further disclose a capability to learn topology connectivity as to which port is connected to which other port (see Stone column 6, lines 13-30).

As per claim 8, Stone in view of Gleeson further disclose a capability to learn topology connectivity of at least one selected from a group consisting of IP addresses, MACs and VLANs (see Stone column 5, lines 26-36, where VLAN connectivity is disclosed).

As per claim 9, Stone in view of Gleeson further disclose that when a second switch is reachable through a plurality of IP addresses by a first switch, the first switch is capable of learning that the IP addresses are on the second switch with a plurality of addressable interfaces, each addressable interface corresponding to one of the IP addresses (see Stone column 7, lines 31-55).

As per claim 10, Stone in view of Gleeson further disclose that the VLAN membership is determined by applying at least one policy with precedence policy to a specific traffic (see Stone column 5, lines 49-62, where precedence policy is considered the const assigned to a link).

As per claim 11, Stone in view of Gleeson further disclose that one switch is capable of automatically discovering network nodes in the network (see Stone columns 12 and 13, lines 52-67 and 1-50).

As per claim 12, Stone in view of Gleeson further disclose at least one switch advertises connectivity of at least one network node across at least a portion of the backbone network (see Stone column 12 and 13, lines 52-67 and 1-50).

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As per claim 13, Stone in view of Gleeson further disclose that when a network node is moved from a first port to a second, a VLAN membership for the network is remembered (see Stone column 7, lines 7-30, where switches learn of the destination paths between two nodes).

As per claim 14, Stone in view of Gleeson further disclose that a first switch includes the first port and a second switch includes the second port (see Stone column 7, lines 7-30).

3. Claims 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dobbins et al. (US 5,825,772), further in view of Gleeson et al. (US 5,959,989), herein referred to as Gleeson.

As per claim 15, Dobbins et al. disclose a communication network, as claimed, comprising:

at least two switches, each switch being capable of maintaining a MAC table (see columns 9 and 10, lines 52-67 and 1-15, where MAC table is considered a mapping of MAC addresses), with said first switch utilizing a first source learning function to maintain the MAC table, and said second source switch using a second source learning function to maintain the MAC table, wherein said first source learning function is independent to said second source learning function (see columns 10, lines 41-49, where each switch discovers its own local Virtual Directory), and further wherein each of said first source learning function and said second source learning function including auto-discovery capability (see column 2, lines 39-50);

a backbone network interconnecting the switches, said backbone network utilizing a VLAN advertisement protocol (VAP) (see Fig. 2, and columns 9 and 10, lines 52-67 and 1-25); and

at least one network node coupled to at least one of the switches (see column 10, lines 5-15),

wherein said at least two switches exchange MAC information, wherein at least one switch uses the MAC information from at least one other switch to update its MAC table (see columns 2 and 3, lines 39-50 and 60-67 and 1-9).

Although the system disclosed by Dobbins shows substantial features of the claimed invention (discussed above), it fails to disclose that a user can disable the at least two switches from exchanging MAC information using the VAP and still maintain auto-discovery capability of at least one of said first source learning function and said second source learning function.

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Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Dobbins, as evidenced by Gleeson.

In an analogous art, Gleeson discloses a system containing a VLAN for efficiently distributing multicast messages to subscribing entities of a network (see Abstract). Further showing that using the VLAN Trunk Protocol, advertisements can be sent to switches to re-configure the network such as changing the parameters of an existing VLAN (see column 8, lines 30-47, where intermediate devices are considered switches) by configuring individual ports to receive or ignore messages (see column 11, lines 7-19 and 44-60 and column 12, lines 45-65). Therefore, disabling any messages including MAC information between switches if all ports are to ignore incoming messages from another switch.

Given the teaching of Gleeson, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Dobbins by employing VLAN Trunk Protocol to configure the parameters of an existing VLAN, such as disclosed by Gleeson, in order to create an efficient way of advertising messages.

In considering maintaining auto-discovery capability of at least one of said first source learning function and said second source learning function, a person of ordinary skill in the art would recognize that the system of Dobbins maintains an auto-discovery capability even when a switch is disabled. Dobbins shows that a switch maintains the most up to date topological database by sending a link state request (see column 14, lines 40-45). Given the teaching of Dobbins, it is clear that a switch still maintains auto-discovery capability because once synchronizing messages are enabled (i.e. from a switch restarting) the most current VLAN membership will be available from neighboring switches.

As per claim 16, Dobbins et al. further disclose that at least one switch generates a frame that contains a unique ID (see column 2, lines 39-50).

As per claim 17, Dobbins et al. further disclose that at least one switch builds an adjacency table (see column 15, lines 6-16):

As per claim 18, Dobbins et al. further disclose that at least one switch advertises its VLAN membership information (see column 14, lines 47-64).

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As per claim 19, Dobbins et al. further disclose that at least one switch generates a frame that includes a list of at least one virtual router port in that switch (see column 15, lines 6-32).

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stone in view of Gleeson as applied to claim 1 above, and further in view of Bare (US 5,920,699).

Although the system disclosed by Stone in view of Gleeson shows substantial features of the claimed invention (discussed above), it fails to disclose that the VLANs and the VLAN membership are statically provisioned across the backbone network.

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Stone in view of Gleeson, as evidenced by Bare.

In an analogous art, Bare discloses a communication network comprising at least two switches each having a database to hold VLAN membership, the databases being synchronized further where memberships are statically provisioned across the network (see column 14, lines 1-22).

Given the teaching of Bare, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Stone in view of Gleeson by employing static membership in a switch, such as disclosed by Bare, in order to be able to route broadcast packets (see Bare column 14, lines 15-22).

5. Claim 5 rejected under 35 U.S.C. 103(a) as being unpatentable over Stone in view of Gleeson as applied to claim 4 above, and further in view of Dobbins et al. (US 5,825,772).

Although the system disclosed by Stone in view of Gleeson shows substantial features of the claimed invention (discussed above), it fails to disclose not going through a full time out period after a node moves.

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Stone in view of Gleeson, as evidenced by Dobbins et al.

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In an analogous art, Dobbins et al. discloses a communication network where switches are synchronized and after a node moves, switch does not go through a full time out period (see column 11, lines 33-50).

Given the teaching of Dobbins et al., a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Stone in view of Gleeson by not going through a full time out period after a node moves, such as disclosed by Dobbins et al., in order to accommodate for an unknown mapping change.

Response to Arguments

6. Applicant's arguments filed September 21, 2006 have been fully considered but they are not persuasive.

(A) Applicant contends that Stone in view of Gleeson do not disclose that a user can disable the at least two switches from synchronizing with each other using the VAP and still maintain auto-discovery capability of at least one of said first source learning function and said second source learning function.

In considering (A), the Examiner respectfully disagrees. The cited portions of Stone provide enough motivational evidence to allow one of ordinary skill in the art to realize that the system of Stone could maintain an auto-discovery capability even with the synchronization disabled. Stone shows that a switch will gather the most current VLAN membership from neighboring switches. Although synchronization in a switch may be disabled, the neighboring switches still maintain VLAN membership using the auto-discovery capability. Once the switch has synchronization enabled, the most current VLAN membership will be available for synchronization.

(B) Applicant contends that Dobbins in view of Gleeson do not disclose that a user can disable the at least two switches from synchronizing with each other using the VAP and still maintain auto-discovery capability of at least one of said first source learning function and said second source learning function.

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In considering (B), the Examiner respectfully disagrees. The cited portions of Dobbins provide enough motivational evidence to allow one of ordinary skill in the art to realize that the system of Dobbins could maintain an auto-discovery capability even with the synchronization disabled. Dobbins shows that a switch will gather the most current VLAN membership from neighboring switches. Although synchronization in a switch may be disabled, the neighboring switches still maintain VLAN membership using the auto-discovery capability. Once the switch has synchronization enabled, the most current VLAN membership will be available for synchronization.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip J. Chea whose telephone number is 571-272-3951. The examiner can normally be reached on M-F 6:30-4:00 (1st Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Burgess can be reached on 571-272-3949. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Philip J Chea
Examiner
Art Unit 2153

PJC 1/3/07


RUPAL DHARIA
SUPERVISORY PATENT EXAMINER